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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,636	09/13/2005	Christoph Baumhof	BAUMHOF 1	4945
1444 7590 02/15/2008 BROWDY AND NEIMARK, P.L.L.C. 624 NINTH STREET, NW SUITE 300 WASHINGTON, DC 20001-5303			EXAMINER PULLIAM, CHRISTYANN R	
			ART UNIT 2165	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,636

Applicant(s)

BAUMHOF ET AL.

Examiner

Christyann Pulliam

Art Unit

2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2007 and 09 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 7, 2007 has been entered. The arguments were filed October 9, 2007.

2. Claims 10-17 are pending. Claim 10 is currently amended. Claims 11-17 are previously presented.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the memory controller, the nonvolatile memory and the internal volatile flag memory and the relationship between the elements must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. These errors make it difficult to determine the metes and bounds of the claims. Some illustrative examples are the following: in Claim 10 "in the nonvolatile memory out of the internal memory"; in Claim 12 "the step of repeating the reconstruction... is repeated"; in Claim 13 "a

completion entry (FE) takes place" but entry is a noun here so it cannot take place; in Claim 16 the comma following "records" and in Claim 14 "releasing previously used memory blocks are released for erasing in a background program and initializing the erased blocks accordingly". The phrase "in each case" is used repeatedly in the claims but there does not appear to be different cases presented that would require there to be a different response or a response to different conditions. In Claim 10, there is an "and" between the "continually updating" and "starting" steps. However, there is a step after "starting" which is connected to "starting" with "and" so this first "and" is unnecessary. Additionally, dependent claims should begin "The" not "A" because the method was initially introduced in Claim 10 and that same method is being referenced. Accordingly, the claims should be amended to conform to U.S. practice and the English language.

6. Claims 10-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The preamble of Claim 10 is not fulfilled and is confusing. The preamble uses the word "restoring", but the body of the claims does not contain the word restore. Further, the preamble states "records of a nonvolatile memory" but seems to contradict itself with "said records being stored in... volatile flag memory". Additionally, Claim 17 lacks any steps to explain how or in what way "updating" is done with the "aid" of the table (ZZT)". Accordingly, Claims 10-17 are indefinite.

7. Claims 10-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Inconsistent reference to terms causes confusion as to whether or not the term refers to the same element as the prior use of the term. The first reference to an element should use the article "a" or "an" if singular or no article if plural. Later references to the same element should use the same full term and format of the term and either "the" or "said" since the element was introduced prior to this reference to it. Some examples are the references to memory. The preamble of Claim 10 introduces "a nonvolatile memory" and "internal volatile flag memory". Therefore, all later references should use these phrases and not "the internal flag memory" or "the flag memory". In Claim 10, it is also unclear if the "administrative memory data" in the "setting up" step is the same as the "administrative data records" introduced in the preamble of Claim 10. The full term with said should also be used in place of "said records" in the preamble to Claim 10. Another example of inconsistent terminology is in Claim 12, "the data records" is used when prior references are to "administrative data records" or this could be the "administrative memory data". The "(RKT)" that follows "reconstruction table" is misplaced by the amendment to Claim 10. The parenthetical should directly follow "table" not "data". Claim 15 introduces a second "a reconstruction table", which makes it unclear if this is the same reconstruction table introduced in Claim 10 or a new one. Accordingly, Claims 10-17 are indefinite.

8. The term "more rapidly accessible" in claim 10 is a relative term which renders the claim indefinite. The term "more rapidly accessible" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It appears to be an unnecessary phrase since all that is really needed is a nonvolatile memory and an internal volatile flag memory. The speed of access plays no role in the claim language.

9. Claim 12 recites the limitation "the step of repeating". Claim 12 recites the limitation "the reconstruction of the administrative data records". Claim 13 recites the limitation "the step of recording, every time the reconstruction was successful, a completion entry" because the prior recording step in Claim 10 was the start not the completion of the reconstruction. Claim 14 recites the limitation "the renewed creation". Claim 14 recites the limitation "the erased blocks". Claim 15 recites the limitation "the first entry". There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 10-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Larner et al., U.S. Patent No. 6,104,638 (hereinafter Larner).

As for Claim 10, Larner teaches:

A method for restoring administrative data records of a nonvolatile memory that can be written in units of sectors and erased in units of blocks, said records being stored in a more rapidly accessible internal volatile flag memory of an assigned memory controller (See e.g. Larner – Abstract), the method comprising the steps of:

setting up in one or more memory blocks of the nonvolatile memory a contiguous reconstruction table for administrative memory data (RKT) (See e.g. Larner - as parameters that are contiguously stored in nonvolatile memory containing an identification field with the first two bits of which specifying the length of the data field, and an optional second field specifying data field length, and the actual data field in column 2, lines 45 to 60, as stored in non-volatile memory. Each parameter representing a data record with two or three fields per record, and by contiguously storing the parameters thereby creating a table of records. This table is purposefully used in the advent of power failure to reconstruct in RAM: the locations of data in nonvolatile memory, or to reconstruct the locations of data in nonvolatile memory for recovery to RAM and the recovery of data to RAM. Furthermore Larner teaches that the data structure may incorporate the use of pointers or references and/or the use of a lookup/hash table in column 3, lines 54 to 64. This data structure would be used for reconstruction of information due to power failure),

continually updating the reconstruction table with records of all write and erase operations in the nonvolatile memory out of the internal flag memory (See e.g. Larner - as a parameter is updated or each time a new segment is written the parameter with its latest value is written to non-volatile memory in column 4, lines 16 to 18), the step of continually updating comprising recording all information with which the administrative data records of the internal flag memory of the memory controller can be completely reconstructed in each case during a restart after a power failure (See e.g. Larner - as each time a segment becomes full, or when a predetermined threshold is reached, the most recent values as stored in RAM are copied into an unused segment of non-volatile memory in column 4, lines 1 to 6, and as a parameter is updated or each time a new segment is written the parameter with its latest value is written to non-volatile memory in column 4, lines 16 to 18. These parameters are used to reconstruct in RAM the layout of the nonvolatile memory storage in column 4, lines 13 to 39), and

starting a reconstruction when a predefined fill level of the reconstruction table (RKT) is reached in each case to create a defined initial state of the administrative data records in the flag memory and in the reconstruction table (RKT) (See e.g. Larner - as segments that contain reconstruction information for defining an initial state of memory become full or reach a predetermined threshold they are recycled, and updates of both written and erased data are reorganized and stored in a nonvolatile memory from column 3, line 66 to column 4, line 27), and

recording the start of the reconstruction as a last entry (OE) in the reconstruction table (See e.g. Larner - as an FFFF found by the firmware in a location where a

parameter ID should have been found, indicates that the end of the records has been reached in column 3, lines 44 to 47. Since data is written in segments this would also indicate the end of the segment and hence the start of a new reorganized segment. Note the applicant's invention is similar in that the last entry is the OE entry, which signifies the table is fully complete – there are no more records, and a new table reorganization may have started. Also initialization values are also discussed in col. 1, lines 50-53 and col. 4, lines 40-65).

As for Claim 11, Larner teaches parent Claim 10. Larner also teaches that every entry in the reconstruction table (RKT) is one sector or one sector segment long (See e.g. Larner - as segments are written into flash memory, working with data structures in column 3, lines 59-62 and also details working with segments as for example in column 1, starting on line 47, "... segmented flash memory is used, in which individual segments can be erased," and on line 57, "When a new segment is written, the new segment is written using the values from RAM.").

As for Claim 12, Larner teaches parent Claim 10. Larner also teaches the reconstruction of the administrative data records of the flag memory is repeated if another power failure has occurred during the reconstruction of the data records (See e.g. Larner - as in the event of power failure provision is made to ensure that no data is lost during the transfer of data from one memory segment to another or during the

writing of data in column 2, line 40 and from column 4, line 58 to column 5, line 22, where the recovery of RAM memory from nonvolatile memory is detailed) .

As for Claim 13, Larner teaches parent Claim 10. Larner also teaches further comprising the step of recording, that every time the reorganization was successful, a completion entry (FE) takes place in the reconstruction table, said completion entry containing a counter (FZ), which is incremented with every completion entry (See e.g. Larner - as a reorganization counter in column 4, on lines 52 – 56 and the first entry (the counter) serves a dual purpose. In addition to counting, the first value of the segment is examined if the value is other than FFFF then the segment is complete and valid. In the event more than one segment contains an entry the lower segment is selected. These completion determinations are based on the first entry in the table from column 4, line 64 to column 5, line 11. Note that the Applicant's specification also relies on the counter in the exact same way as Larner in the event of a power failure).

As for Claim 14, Larner teaches parent Claims 10 and 13. Larner also teaches further comprising for the renewed creation of the reconstruction table (RKT) after a successful reorganization, the previously used memory blocks are released for erasing in a background program and a still erased blocks are initialized accordingly (See e.g. Larner - as previously used memory blocks are erased and reused in column 4, lines 1-12, and that these memory areas are initialized as exemplified in column 2, lines 29-31).

As for Claim 15, Larner teaches parent Claims 10 and 13-14. Larner also teaches wherein the first entry in a reconstruction table (RKT) is a completion entry (FE) (See e.g. Larner - as the first value of the segment is examined if the value is other than FFFF then the segment is complete and valid. In the event more than one segment contains an entry the lower segment is selected. These completion determinations are based on the first entry in the table from column 4, line 64 to column 5, line 11. Note that the applicant's specification also relies on the counter in the exact same way as Larner in the event of a power failure).

As for Claim 16, Larner teaches parent Claim 10. Larner also teaches further comprising maintaining a table (ZZT) as a portion of the administrative data records, in the flag memory for any invalid block pointers that are contained in a block pointer table (BZT) in the nonvolatile memory (See e.g. Larner - a memory map of known defective locations for specific segments is maintained as a record in non-volatile memory and also in RAM in column 6, lines 1-9 and the use of pointers to identify locations in non-volatile memory in column 3, lines 54 to 56).

As for Claim 17, Larner teaches parent Claims 10 and 16. Larner also teaches further comprising updating during the reconstruction the block pointer table (BZT) in each case with aid of the table (ZZT) for invalid block pointers (See e.g. Larner - a memory map of known defective locations for specific segments is maintained as a record in non-volatile memory and also in RAM. The memory map is referenced

through one of the parameters, which are updated in RAM in column 6, lines 1-9 and the use of pointers are specified to identify locations in non-volatile memory in column 3, lines 54 to 56).

Response to Arguments

12. Applicant's arguments filed October 9, 2007 and incorporated into the R.C.E. filed November 7, 2007 have been fully considered but they are not persuasive.

13. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., reorganization, reconstruction table with a fixed length that is optimized, special-end entry, end-of-table marker, counter) are not recited in the rejected independent claim. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Some elements are found in dependent claims but not all. None are found in the current independent Claim 10. Since reconstruction can be reasonably interpreted as copying, the arguments based on the lack of reorganization do not have a basis in any of the claims. The Examiner notes that Larner does in fact have a defined initial state (See e.g. Larner - col. 1, lines 50-53, col. 3, lines 33-40 and col. 4, lines 40-56). Based on the citations presented above, Larner teaches all the

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elements of the claimed invention as best understood in light of the numerous 112 rejections.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christyann Pulliam whose telephone number is 571-270-1007. The examiner can normally be reached on M-F 9 am-6 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on 571-272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRFP *CRFP*
January 30, 2008


NEVEEN ABEL-JALIL
PRIMARY EXAMINER